Carter::Burgess

Memorandum

To: Grady Smith, Jordan, Jones, & Goulding, Inc.

From: Richard Fangmann, Carter & Burgess, Inc.

Date: February 7, 2007

Subject: Chatham Interstate Needs and Prioritization Plan – Identification of Needs Areas

cc: Rod Wilburn, Carter & Burgess, Inc.
Peng Yue, Carter & Burgess, Inc.

As the Chatham County Interstate Needs Analysis and Prioritization Plan progresses from identification of needs to development of improvements to address the needs, identification and evaluation of potential project alternatives is necessary. This memorandum documents potential needs areas for further evaluation in the study. Once these projects are confirmed, further project definition and detailed analysis will be performed.

As always, do not hesitate to call me, Peng Yue, or Rod Wilburn if you have any questions or comments regarding the preliminary list of needs areas or analysis results.

Project Identification in Study Process

The Chatham County Needs Analysis and Prioritization Plan involves the identification and testing of potential improvements to the Interstate system in Chatham County. In order to develop a list of needs areas for evaluation, the results of the Needs Assessment were combined with previous plan recommendations. Potential projects were identified to meet the needs of future year travel conditions, as reflected in the Chatham Interstates Plan Model (2006), a travel demand model developed by the Georgia Department of Transportation (GDOT) for the Chatham Urban Transportation Study (CUTS) and modified for use in the Chatham Interstates project.

Identification of Needs Areas

The needs areas were identified to address needs along the Interstate system in Chatham County. Needs areas include projects identified by GDOT in the Chatham County Needs Analysis and Prioritization Plan Request for Proposals (RFP) as well as through the study needs assessment. A list of needs areas are provided in Table 1 and shown in Figure 1. Additional details about each need area is provided in the paragraphs that follow. The projects are shown in the table and below by reference number. Reference numbers do not reflect project priority.

Reconstruction of I-16 at SR 307 (Dean Forest Road) Interchange (No. 1)

***Project Type*:** Interchange Reconstruction.

Extents: I-16 in the vicinity of SR 307 (Dean Forest Road).

***Purpose of Improvement**:* Enhancement of traffic operations, safety, and truck accessibility.

Need Satisfied by Improvement: Reconstruction of the I-16 interchange at SR 307 (Dean Forest Road) will enhance its capability to accommodate truck traffic traveling to/from the north along SR 307. This interchange experienced more crashes than the countywide average of all interchanges (including crashes within ½ mile on either side of the freeway). This improvement will address safety issues and provide intersection geometry conducive of use by truck traffic.

Technical Justification: The reconstruction of the of I-16 at SR 307 (Dean Forest Road) interchange is expected to enhance intersection operations at the interchange resulting in reduced delay and crash experience.

Inclusion in Previous Planning Efforts: Included in CUTS Long Range Transportation Plan (LRTP) and identified for consideration by GDOT.

Reconstruction of I-95 at I-16 Interchange (No. 2)

***Project Type*:** Interchange Reconstruction.

***Extents**:* I-95 at I-16 including ramps and ramp junctions.

***Purpose of Improvement**:* Enhancement of traffic operations and capacity.

Need Satisfied by Improvement: Reconstruction of the I-95 at I-16 interchange will remove the cloverleaf design currently in place to better accommodate future traffic flow.

Technical Justification: Weaving between merge and diverge movements on the cloverleaf interchange limits capacity. The tight curvature and acceleration needs associated with the cloverleaf design is not compatible with heavy truck traffic use anticipated at the interchange.

Inclusion in Previous Planning Efforts: Included in CUTS LRTP and identified for consideration by GDOT.

I-95 at US 80 Interchange Modification and Frontage Roads (No. 3)

***Project Type*:** US 80 Interchange Modification and Frontage Road between Pine Barren Road and US 80.

***Extents**:* I-95 at US 80 and extending south to Pine Barren Road.

***Purpose of Improvement**:* Enhancement of interchange capacity, safety, and access to nearby property.

Need Satisfied by Improvement: Reconstruction of the I-95 at US 80 interchange will relieve congested conditions in the vicinity of the interchange and will enhance safety at the interchange through improved intersection geometry.

Technical Justification: Interchange delay and crash experience are expected to decrease with the additional capacity and reduced congestion.

Inclusion in Previous Planning Efforts: Included in CUTS LRTP and identified for consideration by GDOT.

Reconstruction of I-16 at I-516 Interchange (No. 4)

***Project Type*:** Interchange Reconstruction.

Extents: I-16 at I-516 including ramps and ramp junctions.

Purpose of Improvement: Enhancement of traffic operations and capacity.

Need Satisfied by Improvement: Reconstruction of the I-16 at I-516 interchange will remove the left side entrances from I-516 onto I-16) and will better accommodate future traffic flow. Weaving at I-16 left side merge areas limits capacity and violates driver expectancy. The tight curvature and acceleration needs associated with the cloverleaf design is not compatible with heavy truck traffic use anticipated at the interchange.

Technical Justification: Interchange delay and crash experience are expected to decrease with the additional capacity and reduced congestion.

Inclusion in Previous Planning Efforts: Included in CUTS LRTP and identified for consideration by GDOT.

Widening of I-95 from Bryan County to I-16 (No. 5)

***Project Type*:** Widening of freeway from 6 to 8 travel lanes.

Extents: Bryan County to I-16.

Purpose of Improvement: The I-95 widening will provide additional capacity for general purpose traffic traveling along the corridor.

Need Satisfied by Improvement: The widening of I-95 will relieve over-capacity conditions anticipated along this section of freeway (year 2030 deficiencies exceed the capacity equivalent to that of one-half a travel lane in each direction). The additional lanes will aid safety along the freeway as congestion related crashes will be reduced. The additional capacity will facilitate reliable truck movement along I-95, along with general purpose traffic.

Technical Justification: The widening of I-95 results in improved year 2030 freeway LOS based on results of the Chatham Interstates Plan Model.

Inclusion in Previous Planning Efforts: Included in CUTS LRTP and identified for consideration by GDOT.

Widening of I-95 from I-16 to South Carolina (No. 6)

***Project Type*:** Widening of freeway from 6 to 8 travel lanes.

Extents: I-16 to South Carolina.

Purpose of Improvement: The I-95 widening will provide additional capacity for general purpose traffic traveling along the corridor.

Need Satisfied by Improvement: The widening of I-95 will relieve over-capacity conditions anticipated along this section of freeway (year 2030 deficiencies exceed the capacity equivalent to that of one-half a travel lane in each direction). The additional lanes will aid safety along the freeway as congestion related crashes will be reduced. The additional capacity will facilitate reliable truck movement along I-95, along with general purpose traffic.

Technical Justification: The widening of I-95 results in improved year 2030 freeway LOS based on results of the Chatham Interstates Plan Model.

Inclusion in Previous Planning Efforts: Included in CUTS LRTP and identified for consideration by GDOT.

Widening of I-516 from Veterans Parkway to Mildred Street (No. 7)

***Project Type*:** Widening of freeway from 4 to 6 travel lanes.

Extents: Veterans Parkway to Mildred Street.

Purpose of Improvement: The I-516 widening will provide additional capacity for general purpose traffic traveling along the corridor.

Need Satisfied by Improvement: The widening of I-516 will relieve over-capacity conditions anticipated along this section of freeway in year 2030. The additional lanes will aid safety along the freeway as congestion related crashes will be reduced. The additional capacity will reduce queuing at the terminus of I-516 at Mildred Street.

Technical Justification: The widening of I-95 results in improved year 2030 freeway LOS based on results of the Chatham Interstates Plan Model.

Inclusion in Previous Planning Efforts: Included in CUTS LRTP and identified for consideration by GDOT.

Northwest Tollway (No. 8)

***Project Type*:** New four lane roadway with limited access and toll.

***Extents**:* I-16 near I-516 to SR 21 near I-95.

***Purpose of Improvement**:* The new roadway will provide access to the Port of Savannah and adjacent industrial areas from both the I-16 and I-95 corridors. Truck movement to/from these areas will particularly benefit from the new access. \

Need Satisfied by Improvement: The Northwest Tollway will provide truck access to the port area to relieve the SR 21 corridor and reduce truck traffic using I-516 for access to this area. The additional truck capacity will reduce the overcapacity conditions along I-95 and I-16.

Technical Justification: The widening of I-95 results in improved year 2030 freeway LOS along I-16 east of I-95 and along I-95 north of I-16 based on results of the Chatham Interstates Plan Model.

Inclusion in Previous Planning Efforts: Included in CUTS LRTP.

Reconstruction of I-95 at SR 21 Interchange and widening of SR 21 South of I-95 (No. 9)

***Project Type*:** Interchange Reconstruction and widening of SR 21 from 4 to 6 lanes.

***Extents**:* I-95 at SR 21 and widening for 1.4 miles south.

***Purpose of Improvement**:* The reconstructed interchange and widened roadway will enhance traffic operations and capacity and will provide for access to/from the growing Port of Savannah area.

Need Satisfied by Improvement: Reconstruction of the I-95 at SR 21 interchange will provide needed operational and capacity improvements at this congested interchange. Widening of SR 21 will allow this road and interchange to serve heavy traffic anticipated due to growth of the Port of Savannah with or without the Northwest Tollway.

Technical Justification: Interchange delay and crash experience are expected to decrease with the additional capacity and reduced congestion.

Inclusion in Previous Planning Efforts: Included in CUTS LRTP.

Widening of I-16 from I-95 to I-516 (No. 10)

***Project Type*:** Widening of freeway from 4 to 6 travel lanes.

***Extents**:* I-95 to I-516.

***Purpose of Improvement**:* The I-16 widening will provide additional capacity for general purpose traffic traveling along the corridor.

Need Satisfied by Improvement: The widening of I-16 will relieve over-capacity conditions anticipated along this section of freeway (year 2030 deficiencies between I-95 and SR 307 exceed the capacity equivalent to that of one-half a travel lane in each direction). The additional lanes will aid safety along the freeway as congestion related crashes will be reduced. The additional capacity will facilitate reliable truck movement along I-16, along with general purpose traffic.

Technical Justification: The widening of I-16 results in improved year 2030 freeway LOS based on results of the Chatham Interstates Plan Model.

Inclusion in Previous Planning Efforts: Included in CUTS LRTP.

Widening of SR 307 (Dean Forest Road) (No. 11)

***Project Type*:** Widening of arterial from 4 to 5 travel lanes.

***Extents**:* From I-16 extending one half mile to the north.

***Purpose of Improvement**:* The SR 307 (Dean Forest Road) widening will provide additional capacity for traffic traveling to the interchange from SR 307, including heavy truck traffic flows.

Need Satisfied by Improvement: The widening of I-516 will relieve over-capacity conditions anticipated along SR 307 north of I-16 and will facilitate truck traffic movement approaching this section of freeway.

Technical Justification: Interchange delay is expected to decrease with the additional capacity.

Inclusion in Previous Planning Efforts: Included in CUTS LRTP.

Widening of SR 25 (Bay Street) (No. 12)

***Project Type*:** Widening of arterial from 4 to 5 travel lanes.

***Extents**:* From I-516 extending east to the Bay Street Viaduct.

***Purpose of Improvement**:* The SR 25 (Bay Street) widening will provide turning capability to enhance traffic operations and safety.

Need Satisfied by Improvement: The SR 25 (Bay Street) corridor provides a direct connection between downtown Savannah and the SR 21 and I-516 corridors. Capacity along this corridor is limited by the four lane undivided section. Conflicts between left turn and through traffic constrain the operations along the corridor, especially with truck traffic.

Technical Justification: The widening of SR 25 (Bay Street) to provide left turning capability will improve corridor capacity, operations, and safety, by reducing conflicts between left turning and through vehicles.

Inclusion in Previous Planning Efforts: Included in CUTS LRTP.

Widening of Mildred Street / Hampstead Avenue (No. 13)

***Project Type*:** Widening of arterial from 2 to 4 travel lanes.

Extents*:* From I-516 to Abercorn Street.

Purpose of Improvement*:* The Mildred Street / Hampstead Avenue widening will provide additional capacity approaching the I-516 corridor from the south, reducing the capacity constraint at the Montgomery Street intersection to the east.

Need Satisfied by Improvement: Congestion along the I-516 corridor near its eastern terminus will be reduced by the additional access point reliving demand to/form the south at the Montgomery Street intersection.

Technical Justification: Congestion along I-516 near its eastern terminus (transitioning from a freeway to a surface arterial) results in significant delay during the peak hours. The delay will be reduced by removing the abrupt change in capacity through enhancement of the I-516 at Mildred Street intersection, serving traffic primarily to/from the south.

Inclusion in Previous Planning Efforts: Included in CUTS LRTP.

New Interchange along I-95 at Quacco Road (No. 14)

***Project Type*:** New interchange.

Extents*:* I-95 at Quacco Road.

Purpose of Improvement*:* The Quacco Road interchange will serve traffic flowing to/from I-95, relieving the SR 204 interchange which is expected to operate under congested conditions in year 2030.

Need Satisfied by Improvement: The Quacco Road interchange will provide needed freeway access to the area south of I-16 and will relieve congestion at the adjacent SR 204 interchange.

Technical Justification: Reduced travel time and vehicle miles traveled are anticipated due to more direct freeway access. Reduced congestion at the I-95 at SR 204 interchange are also anticipated.

Inclusion in Previous Planning Efforts: Included in CUTS LRTP.

Widening of Quacco Road (No. 15)

***Project Type*:** Widening of arterial from 2 to 4 travel lanes.

***Extents**:* Pooler Parkway to I-95.

***Purpose of Improvement**:* The Quacco Road widening will provide additional capacity for traffic traveling to/from I-95 via the new proposed interchange (see No. 14).

Need Satisfied by Improvement: The widening of Quacco Road will relieve over-capacity conditions anticipated along the road as it serves traffic flowing to/from I-95.

Technical Justification: Corridor delay is expected to reduce with the additional capacity.

Inclusion in Previous Planning Efforts: Included in CUTS LRTP.

Reconstruction of I-95 at SR 204 Interchange (No. 16)

***Project Type*:** Interchange Reconstruction.

***Extents**:* I-95 in vicinity of SR 204.

***Purpose of Improvement**:* Enhancement of traffic operations and safety.

Need Satisfied by Improvement: Reconstruction of the I-95 interchange at SR 204 will enhance its capability to accommodate anticipated traffic volume growth. This interchange experienced more than twice as many crashes as the countywide average of all interchanges (including crashes within ½ mile on either side of the freeway). This improvement will address safety issues and interchange operations/capacity needs to satisfy year 2030 projected traffic volumes.

Technical Justification: The reconstruction of the of I-95 at SR 204 interchange is expected to enhance intersection operations at the interchange resulting in reduced delay and crash experience.

Inclusion in Previous Planning Efforts: This improvement was identified for consideration by GDOT.

Auxiliary Lanes along I-516 at SR 25/US 17 Interchange (No. 17)

***Project Type*:** Auxiliary Lanes.

***Extents**:* I-516 north of SR 25/US 17.

***Purpose of Improvement**:* Enhancement of freeway operations at merge and diverge areas north of SR 25 / US 17 interchange.

Need Satisfied by Improvement: Heavy ramp volumes are accommodated without contributing to congestion through implementation of extended merge areas / auxiliary lanes along I-516.

Technical Justification: Installation of extended merge and diverge areas is expected to provide additional capacity for interchange access.

Inclusion in Previous Planning Efforts: This improvement was identified for consideration by GDOT.

Addition of Truck Lanes along I-95 from Bryan County to South Carolina (No. 18)

***Project Type*:** Addition of Two Truck Only Lanes to the Current 6 Travel Lanes.

Extents*:* I-16 to South Carolina.

Purpose of Improvement*:* The addition of truck only lanes along I-95 will provide additional capacity for truck traffic, freeing the remaining travel lanes for general purpose use.

Need Satisfied by Improvement: The truck volumes anticipated along I-95 suggest that a well utilized truck lane system will free capacity in general purpose lanes while reducing conflicts between trucks and automobiles. The additional capacity along I-95 will relieve over-capacity conditions anticipated along I-95 (year 2030 deficiencies exceed the capacity equivalent to that of one-half a travel lane in each direction).

Technical Justification: The addition of truck only lanes along I-95 results in improved year 2030 freeway LOS based on results of the Chatham Interstates Plan Model.

Inclusion in Previous Planning Efforts: Potential Additional Project suggested in Chatham Interstates Plan.

Frontage Roads along I-95 from SR 204 to Quacco Road (No. 19)

***Project Type*:** Frontage roads installation to support local freeway access.

Extents*:* Along both sides of I-95 between SR 204 and Quacco Road.

Purpose of Improvement*:* Provide connection between Quacco Road and SR 204 corridors.

Need Satisfied by Improvement: Connectivity between adjacent corridors will improve freeway access with or without a new interchange at I-95 and Quacco Road (No. 14)

Technical Justification: Connection to an interchange will improve connectivity and reduce overall vehicle miles traveled.

Inclusion in Previous Planning Efforts: Potential Additional Project suggested in Chatham Interstates Plan.

I-95 Truck-Only Interchange South of US 80 (No. 20)

***Project Type*:** Truck-only interchange accessing truck only lanes.

Extents: I-95 south of US 80 with connecting road to US 80.

Purpose of Improvement: Provide means for truck ingress and egress from freeway truck-only lanes, if installed (No. 18), to Airport and industrial areas along I-16 and US 80 corridors.

Need Satisfied by Improvement: The truck volumes anticipated along I-95 suggest that a well utilized truck lane system will free capacity in general purpose lanes while reducing conflicts between trucks and automobiles. The additional capacity along I-95 will relieve over-capacity conditions anticipated along I-95 (year 2030 deficiencies exceed the capacity equivalent to that of one-half a travel lane in each direction).

Technical Justification: The addition of truck-only interchanges will relieve surrounding interchanges by significantly reducing truck traffic accessing those facilittes.

Inclusion in Previous Planning Efforts: Potential Additional Project suggested in Chatham Interstates Plan.

I-95 Truck-Only Interchange South of SR 21 (No. 21)

***Project Type*:** Truck-only interchange accessing truck only lanes.

Extents: I-95 south of SR 21 with connecting road to Jimmy Deloach Parkway.

Purpose of Improvement: Provide means for truck ingress and egress from freeway truck-only lanes, if installed (No. 18), to Port of Savannah and industrial areas along SR 21 corridor.

Need Satisfied by Improvement: The truck volumes anticipated along I-95 suggest that a well utilized truck lane system will free capacity in general purpose lanes while reducing conflicts between trucks and automobiles. The additional capacity along I-95 will relieve over-capacity conditions anticipated along I-95 (year 2030 deficiencies exceed the capacity equivalent to that of one-half a travel lane in each direction).

Technical Justification: The addition of truck-only interchanges will relieve surrounding interchanges by significantly reducing truck traffic accessing those facilittes.

Inclusion in Previous Planning Efforts: Potential Additional Project suggested in Chatham Interstates Plan.

Reconstruction of I-16 at Chatham Parkway Interchange (No. 22)

***Project Type*:** Interchange Reconstruction.

***Extents**:* I-95 in vicinity of Chatham Parkway.

***Purpose of Improvement**:* Enhancement of traffic operations and safety.

Need Satisfied by Improvement: Reconstruction of the I-95 interchange at Chatham Parkway will enhance its capability to accommodate anticipated traffic volume growth. This improvement will address interchange operations/capacity and safety needs to satisfy year 2030 projected traffic volumes.

Technical Justification: The reconstruction of the of I-95 at Chatham Parkway interchange is expected to enhance intersection operations at the interchange resulting in reduced delay and crash experience.

Inclusion in Previous Planning Efforts: Potential Additional Project suggested in Chatham Interstates Plan.

Widening of I-16 from Bryan County to I-95 (No. 23)

***Project Type*:** Widening of freeway from 4 to 6 travel lanes.

***Extents**:* Bryan County to I-95.

***Purpose of Improvement**:* The I-16 widening will provide additional capacity for general purpose traffic traveling along the corridor.

Need Satisfied by Improvement: The widening of I-16 will relieve over-capacity conditions anticipated along this section of freeway (year 2030 deficiencies west of I-95 indicate worse than LOS C). The additional lanes will aid safety along the freeway as congestion related crashes will be reduced. The additional capacity will facilitate reliable truck movement along I-16, along with general purpose traffic.

Technical Justification: The widening of I-16 results in improved year 2030 freeway LOS based on results of the Chatham Interstates Plan Model.

Inclusion in Previous Planning Efforts: Potential Additional Project suggested in Chatham Interstates Plan.

Interchange Reconstruction/Auxiliary Lanes along I-516 north of I-16 (No. 24)

***Project Type*:** Interchange Reconstruction/Auxiliary Lanes.

***Extents**:* I-516 from I-16 to SR 21.

***Purpose of Improvement**:* Enhancement of freeway operations and safety by addressing traffic operational needs due to ramp operations at multiple access points within a small section of I-516.

Need Satisfied by Improvement: Heavy ramp volumes are accommodated without contributing to congestion through implementation of extended merge areas / auxiliary lanes along I-516 and consideration of modified access location and configuration.

Technical Justification: Addressing deficient operations due to close ramp spacing is expected to reduce delay and enhance freeway safety.

Inclusion in Previous Planning Efforts: Potential Additional Project suggested in Chatham Interstates Plan.

Interchange Reconstruction/Auxiliary Lanes along I-516 south of I-16 (No. 25)

***Project Type*:** Interchange Reconstruction/Auxiliary Lanes.

***Extents**:* I-516 from I-16 to Veterans Parkway.

***Purpose of Improvement**:* Enhancement of freeway operations and safety by addressing traffic operational needs due to ramp operations at multiple access points within a small section of I-516.

Need Satisfied by Improvement: Heavy ramp volumes are accommodated without contributing to congestion through implementation of extended merge areas / auxiliary lanes along I-516 and consideration of modified access location and configuration.

Technical Justification: Addressing deficient operations due to close ramp spacing is expected to reduce delay and enhance freeway safety.

Inclusion in Previous Planning Efforts: Potential Additional Project suggested in Chatham Interstates Plan.

Next Steps

The needs areas indicated in the attached list are potential locations for further evaluation. Once the list of needs areas is refined, criteria for further review and evaluation will be established. The needs areas will then be evaluated using the Chatham Interstates Plan Model and TransModeler Software.